

We claim:

Claim 1 A network security apparatus comprising:

a plurality of private networks with routers to external networks; and
a plurality of switch boxes connecting said private networks to a plurality of
network enabled nodes; and
said switch box comprising a switch that controls which of said private networks
is connected to said plurality of nodes.

Claim 2 The apparatus of Claim 1 wherein said switch is controlled by one of said private
networks.

Claim 3 The apparatus of Claim 1 wherein said switch box is built into said node.

Claim 4 The apparatus of Claim 1 wherein said plurality of switch boxes are built into a
hub used to connect a plurality of nodes.

Claim 5 The apparatus of Claim 1 wherein said switch box is located between a hub
used to connect a plurality of nodes and the said node.

Claim 6 The apparatus of Claim 1 wherein said switch controls which of two private
networks is connected to said node.

Claim 7 The apparatus of Claim 2 wherein said private network that controls switch
comprises a node that controls switch.

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Claim 8 The apparatus of Claim 1 wherein said switch box additionally comprises a firewall.

Claim 9 The apparatus of Claim 8 wherein said switch box additionally comprises memory readable by said firewall

Claim 10 The apparatus of Claim 9 wherein said switch box comprises a memory write control that comprises an AND function with the electrical signal that enables said switch to connect said controlling network to said node.

Claim 11 The apparatus of Claim 1 wherein said switch box comprises connection with a plurality of electrical signals within the node.

Claim 12 The apparatus of Claim 7 wherein said plurality of private networks comprises a node for recording logging information.

Claim 13 The apparatus of Claim 1 wherein the plurality of private networks operate on a plurality of media.

Claim 14 The apparatus of Claim 13 wherein said plurality of media comprises different protocols operating over said plurality of private networks.

Claim 15 The apparatus of Claim 1 wherein said switch box is reconfigurable to support different protocols.

Claim 16 The apparatus of Claim 1 wherein said plurality of nodes essentially only receive data and are connected to said plurality networks simultaneously.

Claim 17 The apparatus of Claim 1 wherein said plurality of nodes essentially only send data and are connected to said plurality networks simultaneously.

Claim 18 A method of ensuring network security comprising the steps of:

notifying a node on a first private network of the need to access a plurality of nodes from a node on a public network; and

said notified node supplying security information about said plurality of nodes to said public node; and

said notified node supplying security information about said public node to said plurality of nodes; and

said notified node switching said plurality of nodes to a second private network; and

said public node sending and receiving information with said plurality of nodes; and

said notified node switching said plurality of nodes to a said first private network.

Claim 19 The method of claim 18 wherein said plurality of nodes send security information to said public node after switch has been changed to said second private network.

Claim 20 The method of claim 18 wherein said sent and received security information passes through a firewall in said switch and said node supplying information supplies firewall check list to firewall readable memory.

Claim 21 The method of claim 18 wherein said sending and receiving information passing between the public and private networks comprises the steps of:

sending and receiving information at said routers with a plurality of protocols;
and

passing information between said routers and said nodes over a single media;
and

sending and receiving information at said nodes with a plurality of protocols.

Claim 22 A network security apparatus comprising:

a means for connecting a plurality of public network connected private networks to a plurality of nodes; and

a means for switching one of said private networks to one or more of said nodes;
and

a means for checking data packets passing from said public network to said nodes.

Claim 23 A network security apparatus comprising:

a plurality of private networks with routers to external networks; and

a plurality of switch boxes connecting said private networks to a plurality of network enabled nodes; and

said switch box comprising a switch that determines which network is connected to which nodes; and

said switch controlled by a computer on one of said plurality of networks; and

said switch box comprising a firewall; and

said switch box comprising memory read by said firewall; and

said memory written by said switch controlling computer.

Claim 24 The apparatus of Claim 23 additionally comprising said plurality of networks operating over a single media using a plurality of network protocols.